

WESSEX STATIONARY ENGINE CLUB



NEWSLETTER

DECEMBER 1989.

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THE OFFICERS AND COMMITTEE WISH ALL WSEC MEMBERS, AND INDEED ALL
STATIONARY ENGINE MEN EVERYWHERE A

*Merry Christmas
and a Happy
New Year*

Brian Munt

Chairman, WSEC.

THE SPANNER.

Although the world may appear to be in turmoil, the Newsletter Team hope that our readers will enjoy their Christmas and find peace and happiness in the New Year.

To more mundane matters now I'm afraid. On 1st January 1990, your WSEC subscriptions will need to be renewed and as forecast the rates have had to be increased to avoid a 'Balance of Payments Deficit' in the Club's finances. To make the Treasurer's task of keeping track of payments easier, would members please complete the tear off slip when renewing whether this is done by post or in person. This will also enable addresses to be checked for Newsletter ditribution.

Having completed another year of Editorship may I say a sincere thank you to all those who have contributed articles etc. to the Newsletter as without your help blank pages would result. Even worse more of my natterings might have been necessary..... as it was the Editorial cupboard was quite bare at times. News and views are most welcome, just a telephone call will suffice, I will do the rest.

Finally a thank you to Jackie Lambert for typing, at very short notice, last month's Newsletter while Mary Butler nursed her poorly back. We hope you soon recover, Mary.

Cheers for now,

Claude Lowther

COMMITTEE NEWS.

The November Committee meeting was held on an extremely foggy evening, and therefore very short.

The Committee agreed that the Social evening at Chilcompton had been a success although the acoustics in the hall are not all they could be....?

Some day the badge/plaque/nothing problem will be resolved, but for 1990 a decision was made finally, exhibitors will be presented with a cloth badge, as in 1989, but of a different colour. Rosettes and the usual cups will be awarded to class winners with the addition next year of the Lister and Wolseley Economy Run winners.

The programme for 1990 was finalised and sent to the printers so as to be ready for distribution in January.

In fact I think that is about all we discussed apart from how many near misses we'd had in the fog, and how our illustrious Chairman had taken the wrong turning and landed up in a bus layby, and then was unable to find his way out.

Wishing you all a very Happy Christmas, and may all your problems in 1990 be small.

Best wishes,

Shirley Gale, Secretary.

CLUB DIARY.

Mon 29th January '90 CAMPAANOLOGY. A welcome return visit of Michael Horsman who will give an illustrated talk on church towers and church bells. Michael will solve the mysteries of change ringing, and members will be able to try their hand at this noble art as he is bringing a set of hand bells.

THE FULL QUART INN CRANK UP.

With the beautiful weather we were blessed with, I reckon God is a crank-up man. The 9th Crank-Up got into full swing with an excellent display of stationary engines, tractors, vintage cars and organs. This year we were lucky enough to have four steamers including a working scale model which puffed around the site. We even found space for a 1953 Bristol double decker bus.

The £163.50 taken at the Tencrest Rally was kindly given to our cause along with an extra £50 from the Frost family (Fluffy Toys). May I give special mention to the Pike family, who with their stall managed to beat last years takings with a fantastic £141.85 (Look out Marks and Spencer). The seasons Rally Treasure Chest for CLIC raised £308.

So when all was safely gathered in, we also managed to beat last years record and handed a handsome £1159.36 to CLIC. The money has gone to the CLIC Research Centre at Bristol.

Mrs Pat Dain, the Clic representative was delighted at the sum given and said "Thank you one and all on behalf of the sick children".

Many thanks to anyone who has helped in any way.... a special thank you to Jim Flood with his set of coloured lights, it brightened up the whole show Jim..... Ta.

Roy Cox and Families.

1990 SUBSCRIPTIONS.

Subscriptions are due for renewal on the 1st January 1990 and unfortunately there is an increase this year. Joint membership (Husband and wife) will now be £8.00, Single membership is £6.00 and Junior remains at £1.00.

When renewing membership please use this slip and return with remittance to :-

Mrs Jackie Lambert, 15 Beechwood Avenue, FROME, Somerset BA11 2AX.

If you require your insurance certificate by return of post, please send a 8½ x 4½ stamped addressed envelope, otherwise your certificate will be sent with the next Newsletter.

MEMBERS NAME.....

ADDRESS.....

.....POST CODE.....

Joint Membership(HUSBAND &WIFE) £8.0.....Single(£6.0).....Junior(£1.0).....

(Please indicate by a tick the type of membership you require)

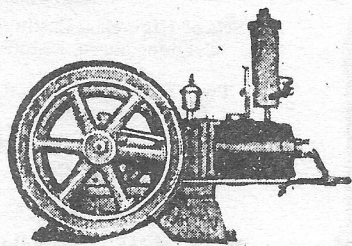
Between the turn of the century and the First World War there were four main companies in Derby producing small power engines. Butler Brothers, of Upper Dale Works, appear to have been the first on the scene, advertising in 1899 a $\frac{1}{2}$ hp Otto cycle hot tube ignition gas engine complete with tank and gas bag for £3. 10s.

Butler Bros.' $\frac{1}{8}$ H.P. Gas Engine

OTTO CYCLE. TUBE IGNITION.

Complete, with Tank & Gas Bag, £3 10s.

Developes one man-power at a cost of one-half-penny per hour.



NEW DESIGN!
HUNDREDS
SOLD!

Customer says:
"The $\frac{1}{8}$ h.p. gas engine you supplied me is a great success, and

I am highly pleased with its working, especially the power. It is the cheapest engine in design, strength, and usefulness I have yet seen." Can deliver from stock. Send immediately. NOTE OUR ADDRESS:

Butler Bros., Upper Dale Works, Derby.

range of engines from $\frac{1}{8}$ hp up to 24hp including both gas & oil engines, launch, cycle & car engines. The HERCULES OIL ENGINE could be delivered from stock in sizes from $\frac{1}{8}$ hp to 4hp. Although the size of the engine illustrated in one of his adverts in January, 1905, is not stated, it would seem to be fractional, probably $\frac{1}{2}$ hp.

By the end of 1907 Henry Butler had moved his business to Alvaston Works, Derby, and in 1908 he was advertising a range of gas & oil engines from $\frac{1}{8}$ hp to 4hp, now limited to his former stock range.

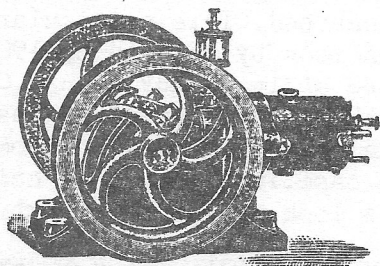
He ran this advert in the Model Engineer & Electrician through until 1910, after which date no more adverts appear. All these later adverts carry the statement, "(No connection whatever with any local firm.)" !

HAVE YOU EVER THOUGHT

How much easier it would be to drive that Lathe, Press, Dynamo, Pump, or whatever you are using, with a "Hercules" Gas or Oil Engine. These Engines are right up-to-date, of highest efficiency and workmanship. Specification—Cylinders reamed and ground, steel slab crankshaft cut from solid, phosphor-bronze bearings, machine-cut gears, large sight-feed lubricator, etc.

Delivery from
Stock.

1-8th to 4 h.p.



Castings and Draw-
ings supplied.

Sizes up to 24 h.p.

Catalogue—Four Stamps.

The "Hercules" Oil and Gas Engine Castings are worth your while to build up, and they are beautifully designed. Detailed drawings are included. All sizes. Send your requirements.

What about Launch and Car Motors for 1905?

I can supply you absolutely anything you want from 1 h.p. to 40 h.p., with 1, 2, 3, 4, and 6 cylinders, air or water-cooled. Call and see me, or send for my catalogue, 4d. Have something guaranteed. "Hercules" Featherweight Bicycle Motors—the lightest engine extant. The "Hercules" Motor Castings will please you. Aluminium cases. Detailed drawings. Catalogue, 4d. State your requirements. "Hercules" 6 h.p. twin-cylinder tricar Motor. No vibration. Complete, £14 10s. Castings and Drawings, £3 18s. 3-cylinder Launch Motor, all sizes. I will quote you keen prices for any machining you want, or odd motor parts—piston rings, cylinders, carburettors, coils, plugs, silencers. My 1905 Catalogue is ready; you must have it at once; 4d. stamps.

You know my place— **HENRY BUTLER, Whiston Street Works, Derby.**

Part 2, MADISON.

The Madison Motor Co. of Woolrych Street Works, Derby, puts in its first appearance in M.E & E. in July 1903 with an advert for 2bhp & 3bhp cycle motors. A couple of months later sees the launch of the "NEW MADISON GAS & OIL ENGINES" designated "Type S" and available in $\frac{1}{2}$ hp and $\frac{3}{4}$ hp sizes. By November 1904 they have introduced a new design. Gone are the wavy spoked fly-wheels and the arched base, now replaced by more conventional curved spoke fly-wheels and a flattened base opening.

By 1903, Henry Butler of Whiston Street Motor Works, Derby was manufacturing the "HERCULES" 2hp cycle motor, which for £11. 10s. fitted, converted your humble bicycle to a motor cycle capable of speeds of up to 30mph! Henry Butler made the point in his advert that he had "Only One Factory".

By the end of 1904 Henry Butler had introduced a large range of engines from $\frac{1}{8}$ hp up to 24hp including both gas & oil engines, launch, cycle & car engines. The HERCULES OIL ENGINE could be delivered from stock in sizes from $\frac{1}{8}$ hp to 4hp. Although the size of the engine illustrated in one of his adverts in January, 1905, is not stated, it would seem to be fractional, probably $\frac{1}{2}$ hp.

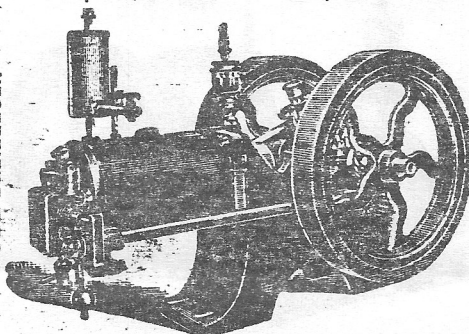
By the end of 1907 Henry Butler had moved his business to Alvaston Works, Derby, and in 1908 he was advertising a range of gas & oil engines from $\frac{1}{8}$ hp to 4hp, now limited to his former stock range.

HAVE YOU EVER THOUGHT

how much extra pleasure there is in Model Building when your tools are driven by a small engine? We are ready to fulfil your requirements. This engine has cylinder, $\frac{3}{4}$ in. bore and 6 in. piston stroke, and develops $\frac{1}{2}$ h.p. easily from ordinary gas supply.

Our price, delivered on rail, £8 15s.

Improved OTTO CYCLE
TUBE IGNITION.



Drives 6-in. screw-cutting lathe on
Heaviest work.
Six Months Guarantee.

We are supplying above engine to consume paraffin oil.

Price, with all Accessories, £12 10s.

This is absolutely the Cheapest and Best Power for Mechanics and Model Engineers.

We can now take orders with delivery at eight days' notice for a short time.

ORDER AT ONCE.

NOTE.—These engines are only obtainable from sole makers—

BUTLER BROS., Dale Works, Derby.

HERCULES OIL ENGINES.

Ready for Work.

h.p.	£	s.	d.
1	4	10	0
2	6	0	0
3	7	0	0
4	9	10	0
5	11	10	0
6	13	10	0
8	17	10	0
10	22	0	0
12	28	0	0
15	35	0	0

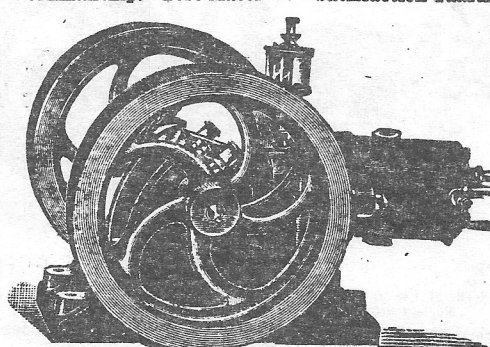
HERCULES GAS ENGINES.

Ready for Work.

h.p.	£	s.	d.
1	3	10	0
2	5	0	0
3	6	0	0
4	8	0	0
5	10	0	0
6	12	0	0
8	16	0	0
10	19	0	0
12	26	0	0
15	33	0	0

Best Workmanship. Best Material. Satisfaction Guaranteed.

POWER GUARANTEED.
ALL ENGINES FULLY TESTED.



HEAVIEST WORK
SIX MONTHS GUARANTEE

Castings and Drawings, as supplied to 13 Technical Colleges and Schools throughout the country:— $\frac{1}{8}$ h.p. 18/-; $\frac{1}{4}$ h.p. 25/-; $\frac{1}{2}$ h.p. 35/-; $\frac{3}{4}$ h.p. 45/-; 1 h.p. 60/-; 1 h.p. 90/-; 1 h.p. 105/-; 2 h.p. 120/-; 3 h.p. 150/-; 4 h.p. 200/-. All parts fully guaranteed. Larger Sizes in Catalogue. The "Hercules" Domestic Pumping Set is invaluable for country districts. Absolutely reliable and simple. All sizes supplied. Combined Electric Light Oil Engine-Dynamo Sets from 2 to 100 lights. "Hercules" Launch Motors and Castings supplied all round the world. Catalogue 4d. stamps. State your exact requirements.

HENRY BUTLER, Alvaston Works, DERBY.

(No connection whatever with any local firm.)

(MADISON, contd.)

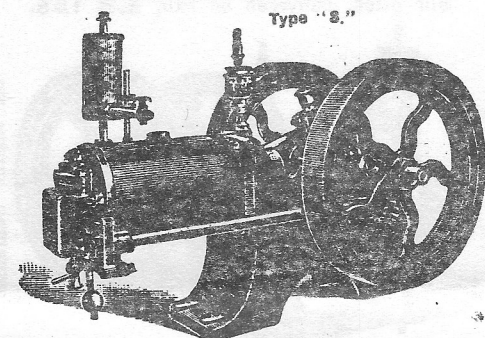
They were obviously producing castings for engines of other sizes since a feature article in M.E. & E., March 9th. 1905 refers to a $\frac{1}{2}$ hp Madison and, although the picture (bottom right) is not very clear, it can be seen that this engine has some significantly different features to the one used in the advertisements. The cylinder mounting is a two-hole oval flange as opposed to a four-hole square one, the base is lower with a round arch and the side shaft, shown in the advert on the right hand side when viewed from the cylinder head end is replaced by a push-rod on the opposite side. This implies a completely different valve layout and governor system.

The company was now known as the MADISON ENGINE CO. of 9, Woolrych Street, Derby, and 1906 sees them promoting "re-designed" engines (although still using the same $\frac{1}{2}$ hp model as an illustration, same as in 1904) in sizes from 1/8hp up to 50hp!

In 1908, under the name of the Woolrych Street Foundry Co.,

NEW MADISON GAS & OIL ENGINES.

For Driving 6-in. Lathes or Dynamo, 120 c.p.
The Most Reliable and Economical Engine made.



for ALL CLASSES OF MOTORS, Etc.

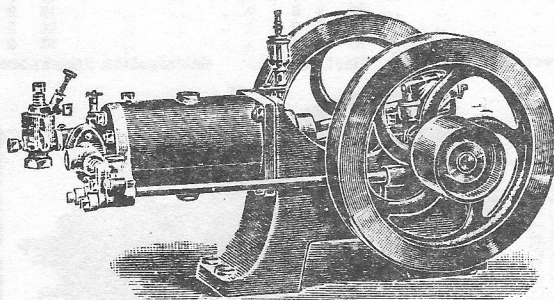
$\frac{1}{2}$ h.p. £2
 $\frac{3}{4}$ h.p. £3 10s.
Hundreds of Testimonials received.
Perfect working.
Engines have Two Flywheels, Steel Cranks, Bronze Bearings, Sight-feed Oilers, and FULL INSTRUCTIONS for running.

Castings Supplied, £2 15s. and
£3 5s.
List, 3 stamps. $\frac{1}{4}$ to 40 h.p.
(Guarantee given.)

MAKERS OF THE
NOTED MADISON MOTORS £3 19s. 6d.
for Cycles. Complete Attachments.
Ready for building up.
2 h.p. Special Motor Castings, machined, 30s. Set, with full print.
9, Woolrych Street Works, DERBY.

NEW MADISON GAS & OIL ENGINES.

For Driving 6-in. Lathes or Dynamo, 120 c.p.
The Most Reliable and Economical Engine made.



$\frac{1}{2}$ h.p. £2
 $\frac{3}{4}$ h.p. £3 10s.
Hundreds of Testimonials received.
Perfect working.
Engines have Two Flywheels, Steel Cranks, Bronze Bearings, Sight-feed Oilers, and FULL INSTRUCTIONS for running.

Castings Supplied, £2 15s. and
£3 5s.
List, 3 stamps. $\frac{1}{4}$ to 40 h.p.
(Guarantee given.)

SPECIALITY—50 Volt Dynamos, run 8 8 c.p. lamps, complete, £1 19s. BEAUTIFUL MACHINES.
MAKERS OF THE
NOTED MADISON MOTORS £3 19s. 6d.
for Cycles. Complete Attachments.
Ready for building up.
2 h.p. Special Motor Castings, machined, 30s. Set, with full print.
9, Woolrych Street Works, DERBY.

THE MADISON MOTOR CO.,

Woolrych St. Works, DERBY.

WE LEAD, OTHERS FOLLOW.

Here is something for MODEL ENGINEER Readers.

**COMPETITION
DEFIED.**

Sets of High-class Castings.
Cylinder bored, Piston
fitted,
Two Flywheels turned,
Full Set Drawings.
2 h.p. £3 15s.
3 h.p. £4.

Yes, here it is.

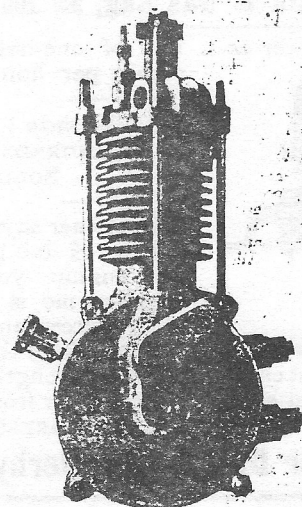
**NOTE. NOTE.—Including
ACCESSORIES.**

Battery Coil, Spray Car-
ourettor, Rim, Clip, Petrol
Tank, Handles, Spark Plug
Belt, Pipe, and Set of Levers,
and Wire

FREE.

Six months' guarantee. All faulty Castings returnable replaced.

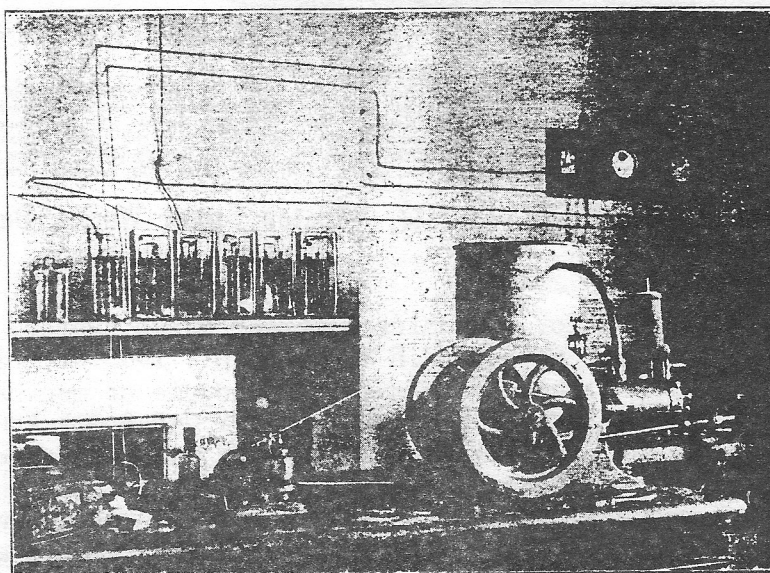
ENGLAND'S LEADING MOTOR EXPERTS.



they were advertising a range of 25 sizes of engines suitable for launches from 10 to 100 feet long with a special model set available a 5/-!

In 1909 Madison were advertising the same engines but the range had been increased to thirty sizes, and by 1910, now under the name of the MADISON DYNAMO ELECTRIC COMPANY with a new address at Littleover, Derby, they may have been in decline since this is the last we see of them in the Model Engineer & Electrician.

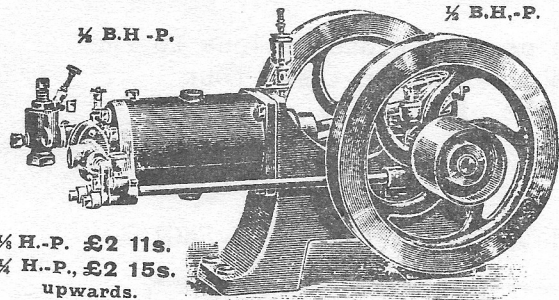
Going back to Butler Brothers' obsessive statements about being the "sole makers" and having "no connection with any other local firm", just compare the engine illustrated in the advert centre-left on this page with the one centre-right on the previous page. There can be little doubt that they show the same engine. A plausible explanation would be that the demise of Butler Brothers around 1902 and the emergence of Madisons in 1903 were rather closely connected. This particular model was then discontinued by Madison by the end of 1904, but this is not the last we see of it by any means! On the other hand it could be that the local typesetter was a bit short of suitable small engine engravings, but somehow I don't think this is the case. Twice may be a coincidence, but three times? Lets look at the next Derby engine maker.



A PRACTICAL

Small-Power Gas Engine at Last

For Engineers, Cycle Manufacturers, Turners etc. Very massive. Drive 6-in. Lathes or 100 c.p. Dynamo. 2 large Flywheels. Complete with Tank, Gas Bag, Instructions. Spare Tubes.

 $\frac{1}{4}$ B.H.-P. $\frac{1}{4}$ B.H.-P. $\frac{1}{4}$ H.-P. £2 11s. $\frac{1}{4}$ H.-P., £2 15s. upwards.

Designed for Hard Work. Continuous Running.

GAS ENGINES (complete) £5. OIL ENGINES, £6.

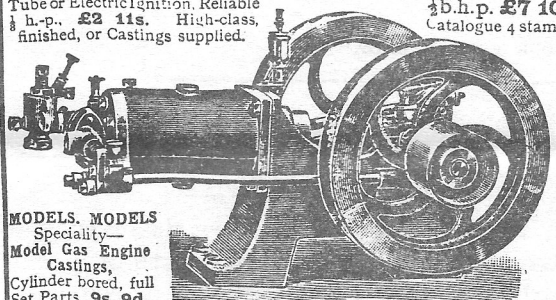
Above represents our latest $\frac{1}{4}$ b.h.p. Oil Engine. All sizes, $\frac{1}{4}$ to 50 h.p. All re designed for 1906. Send also 3 stamps for Catalogue of Engines, Bike Motors, Attachments, Castings, Dynamos, etc.

CHEAPEST BEST.

MADISON ENGINE CO., 9, Woolrych St., DERBY.

Gas, Oil, Petrol Engines. 30 sizes.

Tube or Electric Ignition. Reliable
 $\frac{1}{4}$ h.-p., £2 11s. High-class,
finished, or Castings supplied.

 $\frac{1}{4}$ b.h.p. £7 10s.
Catalogue 4 stamps

MODELS. MODELS
Speciality—
Model Gas Engine
Castings,
Cylinder bored, full
Set Parts, 9s. 9d.

MADISON ENGINE CO., 9, Woolrych Street, DERBY.

The Universal Motor Co., of Copeland Street, Derby were, in 1903, advertising The Universal Cycle Motor in $1\frac{1}{2}$ bhp and 2 bhp sizes, and making the point that they too "...only have one address."

By mid-1904 they have added $2\frac{1}{2}$, 3 and $3\frac{1}{2}$ bhp units to their range.

March 1905 brings an interesting revelation - see the advert at the bottom of this page - in the form of UNIVERSAL GAS and OIL ENGINES in $\frac{1}{4}$ hp., $\frac{1}{2}$ hp., $\frac{3}{4}$ hp., and 1hp. sizes. But just look at this engine, it's the Madison type 'S' formerly the Butler Brothers' improved Otto cycle engine of 1900.

By this time, the Universal Motor Co., have moved their operation to St. James Road, Derby. They did not advertise much in the Model Engineer & Electrician between 1905 and 1909, but in 1910 a new advertisement for an engine of a completely new design puts in a brief appearance.

Finished engines from this new range were available in seven sizes from $\frac{1}{4}$ hp to 2hp whilst the picture shows the style of their 1 to 30bhp models, the larger sizes presumably only made to order.

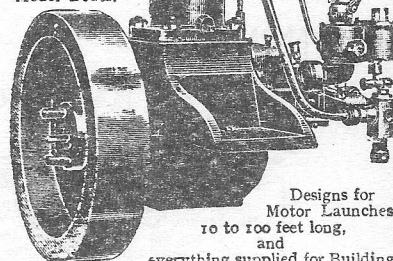
HIGH-CLASS
MOTOR LAUNCH OUTFITS.
LAUNCH AND CAR MOTORS.

Castings, 5s. to £5.

Machined Sets finished, etc.

SPECIAL MODEL SET, 5 -

With Water-cooled Cylinder, Bore Free. Cheapest Outfits for Motor Boats.



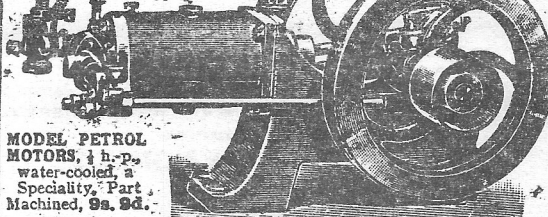
Designs for Motor Launches, 10 to 100 feet long, and everything supplied for Building. 25 sizes. Catalogue 4d. Cheapest House on Earth. WOOLRYCH STREET FOUNDRY CO., DERBY.

Gas, Oil, Petrol Engines, 30 sizes.

Tube or Electric Ignition. Reliable
 $\frac{1}{4}$ h.-p., £2 11s. High-class,
finished, or Castings, supplied.

 $\frac{1}{4}$ b.h.p. £7 10s.
Catalogue 4 stamps

Also Self-igniters supplied.



MODEL PETROL MOTORS, $\frac{1}{4}$ h.-p., water-cooled, a Speciality. Part Machined, 9s. 9d.

MADISON DYNAMO ELECTRIC CO., Littleover, DERBY.

Universal Gas Engines!
Oil Engines! & Motors!Prices! Rockbottom. Quality! the very Highest.
List 3d.

Haven't you seen our latest pattern Motor Attachment, 2 b.h.p. for Roadster Cycles. Then by all means send at once for our Catalogue, giving full description of same. Speed up to 30 miles per hour. Magnificent Motor, with all fittings quite ready to clip on cycle.

Fully guaranteed.

£7 19s. 6d.

Best value on the market. Make your roadster equal to any 30 or 40 guinea motor cycle.

Order at once and be up to date.

Component Motor sets, including all castings, fittings, with cylinder, piston, and flywheels machined, full-size drawings, also coil accumulator, carburettor, switch handles, belt driving rim, plug, petrol tank, pipes, wires, rods, and levers.

2 b.h.p.	£3 12 6
2 $\frac{1}{2}$ "	3 15 6
3 $\frac{1}{2}$ "	4 7 6
Motor Castings, per set machined as above.	
1 $\frac{1}{2}$ b.h.p.	£1 4 6
2 "	1 8 6
2 $\frac{1}{2}$ b.h.p.	£1 12 6
3 "	1 16 6

See that Engine.

It's just the thing for running your lathes, drilling machines, dynamos, paint mills, choppers, grinding or polishing machines, &c.

Absolutely the cheapest power on earth.

Specification.—Mild steel crankshafts and connecting rods, finest bronze bearings throughout, steel rings, pistons, and the best of workmanship and material (only) employed in their manufacture.

Oil. Complete with lamp tanks, &c. Ready for work.

$\frac{1}{4}$ b.h.p.	£3 15 6
"	6 7 6
"	7 19 6
"	9 10 0
Oil.	
$\frac{1}{4}$ b.h.p.	£0 18 6
"	1 19 9
"	2 12 6
"	2 19 6

Finished Engines.

Gas. Complete with gas bag, water tank, etc. Ready for work.

$\frac{1}{4}$ b.h.p.	£2 19 6
"	5 17 6
"	7 10 0
"	9 2 0
Gas.	
$\frac{1}{4}$ b.h.p.	£0 17 9
"	1 18 6
"	2 10 0
"	2 17 6

Complete Castings and Forgings, per set.

$\frac{1}{4}$ b.h.p.	£2 7 6
3 $\frac{1}{2}$ b.h.p., double cylinder	2 10 6

All Motors, Motor Castings, and Sets have aluminium crank chambers.

Launch Motors, water or air cooled castings and parts from stock, Lists 3d.

UNIVERSAL MOTOR CO., St. James' Road, Derby.

Universal did very little advertising in M.E. & E. until what was probably a final fling in 1913 when they ran another advertisement for $\frac{1}{2}$ bhp and $\frac{3}{4}$ bhp gas and oil engines of a side-shaft design fitted with a fly-ball governor. Although not a very clear illustration, there are some marked similarities with the earlier Butler/Madison Type "S" engine. In fact it looks like the early model fitted with the fly-wheels and cylinder head of the Madison 1904 design. The fly-ball governor was an optional extra, as was the second fly-wheel.

It is fairly obvious from these advertisements that, in spite of some protestations to the contrary, there must have been quite a lot of inter-relationships between these four businesses with at least one engine design being common to three of them.

TOM RANDALL.

Next month: The BOWEN & ODERY "SENTINEL", F.DARTON & Co., and the DAVEY SMALL OIL ENGINE.

UNIVERSAL GAS & OIL ENGINES. 2 years' Guarantee Given

Best material and workmanship throughout. If you require power for driving any kind of machinery whatever, Universal Engines will do it. All our engines will work well over the power stated, and every one is carefully tested before despatching. For Electric Lighting, Plating, Charging Accumulators, Pumping, for Driving Potato Washing Machines, and similar work, all kinds of Grinding Machinery, Chaff Cutters, and for all kinds of farm work, in fact, for driving anything and everything where power is required, Universal Engines cannot be beaten. Prices for Complete Engines, as under, including Water Tanks, Oil Reservoirs, etc., ready for immediate work, packed and delivered free on rails at Derby.

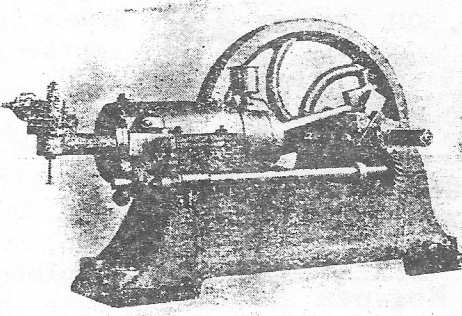
As under—Complete Sets
Castings, Forgings, for
these Engines.

Finished Engines.		As under—Complete Sets Castings, Forgings, for these Engines.	
$\frac{1}{4}$ b.h.p. Gas	£2 19 6..	Oil Engine	£3 15 0..
" "	3 10 0..	" "	4 10 0..
" "	5 17 6..	" "	6 7 6..
" "	6 19 6..	" "	7 19 6..
" "	9 2 0..	" "	9 15 0..
" "	13 10 0..	" "	14 10 0..
" "	14 17 6..	" "	16 10 0..
$\frac{1}{2}$ b.h.p. Gas	£20 19 6..	Oil	£1 0 0
" "	1 5 0..	" "	1 8 6
" "	1 19 6..	" "	2 2 6
" "	2 10 0..	" "	2 15 6
" "	2 19 6..	" "	3 7 6
" "	4 5 0..	" "	4 15 6
" "	4 17 6..	" "	5 0 0

Orders from the Colonies receive prompt attention.

We are also makers of high-class Marine Motors, Cycle Motor Sets. Reversible propellers, etc., etc., from $\frac{1}{4}$ to 60 b.h.p. Be sure and get our color List, fully illustrated, 3 stamps: it will save you pounds.

UNIVERSAL MOTOR CO., St. James Road, DERBY.



SHOWS OUR 1 TO 30 B.H.P.

BEST POSSIBLE WORKMANSHIP.

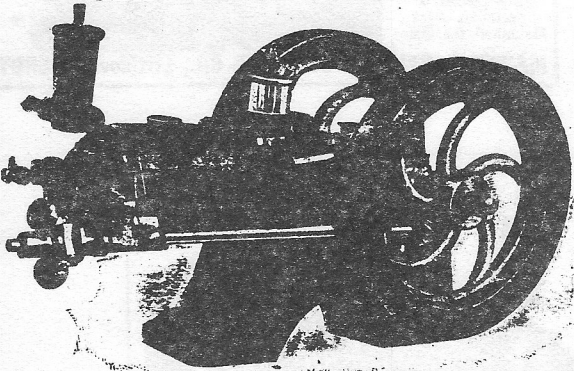
LOWEST POSSIBLE PRICES.

THE NEW 1910 MODEL from UNIVERSAL.

UNIVERSAL MOTOR CO. St. James' Rd.
DERBY.

Full List, 3 Stamps.

SEE THAT ENGINE?



It's the outcome of years of experience in the building of small gas and oil engines, and it is unequalled in reliability, and efficiency, "AND PRICE."

For dynamo driving, driving machinery in workshops, drilling machines, lathes, polishers, grinders, choppers, etc.—it is the acme of perfection.

Each Engine is supplied with one wheel; extra wheel can be supplied if ordered.

$\frac{1}{4}$ b.h.p. £5 17 6, for Gas Engine, or £6 7 6 for Oil Engine

$\frac{3}{4}$ b.h.p. Gas - - £6 19 6; Oil - - £7 18 6.

Governors, if required, 9/6 extra.

POSITIVELY BEST VALUE ON EARTH.

All sizes equally cheap. Full sets castings from stock.

The last UNIVERSAL design of 1913.

battery. One might have been surprised to note that, "The designer had not thought it worthwhile to complicate the apparatus by introducing a speed-changing gear" and it was suggested that its chief defect was that, "...they were too powerful." "Never!"

AND NOW FOR SOMETHING COMPLETELY DIFFERENT!

How many of you, I wonder, remember the good old days when comics like the Eagle, Hotspur, Champion, etc., offered all sorts of futuristic technical juvenilia like the X-RAY MAGNIFIER or the SEE-BACKROSCOPE? Well, here's one that I'm sure every boy would have been thrilled to find in his Christmas stocking, but, alas, never reached the shops, the motorised roller-skate! You would certainly "amaze your friends" with a pair of these.

They were exhibited at the Paris Automobile Show in 1905 and each skate carries a motor of 1hp at 1800 rpm, capable of speeds up to 38mph!

Frontwheel steering was accomplished by moving the heel from side to side and the rear wheels provided the drive. Belt-mounted controls included advance & retard



PETROL MOTOR SKATING.

LIST OF STATIONARY ENGINES TO BE SOLD

CONTACT : ALAN CARNEY - TELEPHONE BATH (0225) 334565

1. Petter "S" Type Class 2 Engine No.23241 complete with trolley	£200
2. Petter "S" Type Class 2 Engine No.36681 3HP 12/14 RPM 525 Radiator cooled on trolley	£300
3. Lister "L" Type Class 2 on Trolley Engine No.5196	£120
4. Ruston Hornsby Engine No.150302 Class 4 6HP Badly cracked casing	£150
5. Fairbanks Morse Class 2 6HP on trolley needs cleaning up - pockets of rust here and there	£450
6. Lister "D" No.1/35698 Class 5 1.1/2HP RPM700 water Pump on trolley	£50
7. Powell Bros Engine No.19360 Class 1 3HP RPM650 on trolley	£600
8. Lister "B" Class 2 Engine No.237010 RPM600 5HP on trolley	£80
9. Lister "CS" Type Class 3 5HP Engine No.CS5902	£125
10. Petter Universal Class 1 Engine No.7666 1.1/2HP RPM 750 on trolley	£180
11. Petter Universal Oil Engine Class 1 Engine No.63061 Apple Top (Red) 3HP RPM 700	£230
12. Bamford 1928 Engine No.8640 Class 1 4HP RPM450 on trolley	£400
13. Fairbanks Morse 1919 Class 1 Petrol/Paraffin 6HP RPM450 on trolley	£450
14. Agricultural Saw American RM Wade & Co Portland Petrol Engine No.FM14831 Model B	£250
15. Lister Domestic water pump Class 3	£20
16. Wolsey WD2 Class 3	£30
17. Villiers Pump and Engine Class 3	£30
18. Villiers Mark 10 Engine	£15
19. Atco ride on mower fan cooled Class 2	£200
21. Two brass blowlamps for hot bulb engines	£50 each
22. Olsen & Rice drill	£70

UNIT 1: THE HISTORY OF THE UNITED STATES

1	What was the first European settlement in North America?	1492
2	What was the first English colony in North America?	1607
3	What was the first American war?	1775-1781
4	What was the first American president?	1789
5	What was the first American city?	1790
6	What was the first American state?	1787
7	What was the first American war?	1812
8	What was the first American president?	1801
9	What was the first American city?	1800
10	What was the first American state?	1802
11	What was the first American war?	1846-1848
12	What was the first American president?	1849
13	What was the first American city?	1850
14	What was the first American state?	1850
15	What was the first American war?	1861-1865
16	What was the first American president?	1861
17	What was the first American city?	1862
18	What was the first American state?	1863
19	What was the first American war?	1898
20	What was the first American president?	1897
21	What was the first American city?	1898
22	What was the first American state?	1899
23	What was the first American war?	1914-1918
24	What was the first American president?	1913
25	What was the first American city?	1914
26	What was the first American state?	1915
27	What was the first American war?	1939-1945
28	What was the first American president?	1933
29	What was the first American city?	1934
30	What was the first American state?	1935
31	What was the first American war?	1950-1953
32	What was the first American president?	1949
33	What was the first American city?	1950
34	What was the first American state?	1951
35	What was the first American war?	1964-1973
36	What was the first American president?	1961
37	What was the first American city?	1962
38	What was the first American state?	1963
39	What was the first American war?	1975-1979
40	What was the first American president?	1973
41	What was the first American city?	1974
42	What was the first American state?	1975
43	What was the first American war?	1980-1988
44	What was the first American president?	1977
45	What was the first American city?	1978
46	What was the first American state?	1979
47	What was the first American war?	1990-1991
48	What was the first American president?	1989
49	What was the first American city?	1990
50	What was the first American state?	1991